Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.   (currently amended) A method of decoding <u>previously encoded information</u>, from a rasterized image formed on a monochrome medium, a plurality of data values encoded within each pixel, the method comprising, for said each pixel, the steps of:

(a) scanning said each pixel to obtain a monochrome density value having a predetermined bit depth;

(b) decomposing said monochrome density value to obtain a first data field and a second data field;

(c) decoding said first data field in order to obtain a first data value; and

(d) decoding said second data field in order to obtain a second data value.

2.   (original) A method of decoding as in claim 1 wherein said monochrome medium is a photosensitive medium.

3.   (original) A method of decoding as in claim 1 wherein the image comprises a computer generated image.

4.   (original) A method of decoding as in claim 1 wherein the image comprises text.

5.   (original) A method of decoding as in claim 1 wherein the image comprises a web page.

6.   (original) A method of decoding as in claim 1 wherein the image is a spreadsheet.

7. (original) A method of decoding as in claim 1 wherein said first data field encodes a lightness data value.

8. (original) A method of decoding as in claim 1 wherein said first data field encodes a color hue data value.

9. (original) A method of decoding as in claim 1 wherein said first data field encodes a red, green, or blue data value.

10. (original) A method of decoding as in claim 1 wherein said first data field encodes a cyan, magenta, or blue data value.

11. (original) A method of decoding as in claim 1 wherein said first data field encodes a hue, saturation, or brightness data value.

12. (original) A method of decoding as in claim 7 wherein said second data field encodes a chroma data value.

13. (original) A method of decoding as in claim 8 wherein said second data field encodes a color hue value.

14. (original) A method of decoding as in claim 9 wherein said second data field encodes a red, green, or blue data value.

15. (original) A method of decoding as in claim 10 wherein said second data field encodes a cyan, magenta, or blue data value.

16. (original) A method of decoding as in claim 11 wherein said second data field encodes a hue, saturation, or brightness data value.

17. (original) A method of decoding as in claim 1 wherein said second data field encodes metadata about the image.

18.   (original) A method of decoding as in claim 1 wherein said second data field encodes audio data.

19.   (original) A method of decoding as in claim 1 wherein said second data field encodes authentication data about the image.

20.   (original) A method of decoding as in claim 1 wherein said second data field encodes animation data about the image.

21.   (original) A method of decoding as in claim 1 wherein said second data field encodes security information about the image.

22.   (original) A method of decoding as in claim 1 wherein said second data field encodes information about data mapping.

23.   (original) A method of decoding as in claim 1 wherein said second data field encodes a reference to other information about the image.

24.   (original) A method of decoding as in claim 1 wherein said second data field encodes a pointer to a color palette.

25.   (original) A method of decoding as in claim 1 wherein said second data field encodes measurement data.

26.   (original) A method of decoding as in claim 1 wherein the step of decoding said first data field to obtain said first data value is conditioned by a statistical frequency.

27.   (original) A method of decoding as in claim 1 further comprising the step of scanning, from said monochrome medium, a human-readable metadata record that comprises information for decoding said first and second data fields.

28.　(original)　The method of decoding as in claim 27 wherein said human-readable metadata record is in XML format.

29.　(original)　The method of decoding as in claim 27 wherein said human-readable metadata record is readable by an optical character recognition apparatus.

30.　(original)　The method of decoding as in claim 1 wherein said second data field encodes error correction information.

31.　(currently amended)　~~the~~ The method of decoding as in claim 1 wherein said predetermined bit depth is provided in a metadata section associated with said rasterized image.

32.　(original)　The method of decoding as in claim 31 wherein said metadata section is human readable.

33.　(original)　The method of decoding as in claim 1 wherein the step of decomposing said monochrome density value is carried out according to metadata associated with said rasterized image.

34.　(original)　The method of decoding as in claim 1 wherein the step of decoding said monochrome density value is carried out according to metadata associated with said rasterized image.

35.　(original)　The method of decoding as in claim 1 further comprising the step of storing said first data value and said second data value.

36.　(original)　The method of decoding as in claim 1 further comprising the step of forming an image according to said first data value and said second data value.

37.　(currently amended)　A method of decoding previously encoded information, from an image formed on a monochrome medium, a

tristimulus color image value associated with each pixel, wherein each tristimulus color image value comprises a first data value, a second data value, and a third data value, the method comprising, for each pixel:

(a) scanning the pixel to obtain a grayscale value having a predetermined bit depth;

(b) storing said grayscale value in a data word, said data word having sufficient bit depth for storing said grayscale value, said data word comprising a first field, a second field, and a third field; and

(c) decoding said first data value from said first field, said second data value from said second field, and said third data value from said third field of said data word in order to form said tristimulus color image value for the pixel.

38.   (original) The method of decoding a tristimulus color value as in claim 37 wherein said first data value is a lightness value, said second data value is an a-channel chroma value, and said third data value is a b-channel chroma value.

39.   (original) The method of decoding a tristimulus color value as in claim 37 wherein said first data value is a brightness value, said second data value is a hue value, and said third data value is a saturation value.

40.   (original) The method of decoding a tristimulus color value as in claim 37 wherein said first data value is a red value, said second data value is a green value, and said third data value is a blue value.

41.   (original) The method of decoding a tristimulus color value as in claim 37 wherein said first data value is a cyan value, said second data value is a magenta value, and said third data value is a yellow value.

42.   (original) The method of decoding a tristimulus color image value as in claim 37 wherein the step of decoding said first data value from said first field is conditioned by the statistical frequency of said first data value in said image.

43. (original) The method of decoding as in claim 37 wherein said predetermined bit depth is provided in a metadata section associated with said image.

44. (original) The method of decoding as in claim 43 wherein said metadata section is human readable.

45. (original) The method of decoding as in claim 37 wherein the step of decoding said first data value, said second data value, and said third data value is carried out according to metadata associated with said image.

46. (original) The method of decoding as in claim 37 further comprising the step of forming an image according to said tristimulus color image value.

47. (currently amended) A method of decoding previously encoded information, from an image formed on a monochrome medium, a CMYK color image value associated with each pixel, wherein each CMYK color image value comprises a cyan data value, a magenta data value, a yellow data value, and a black data value, the method comprising, for each pixel:

(a) scanning the pixel to obtain a grayscale value having a predetermined bit depth;

(b) storing said grayscale value in a data word, said data word having sufficient bit depth for storing said grayscale value, said data word comprising a first field, a second field, a third field, and a fourth field; and

(c) decoding said cyan data value from said first field, said magenta data value from said second field, said yellow data value from said third field, and said black data value from said fourth field of said data word in order to form said CMYK color image value for the pixel.

48. (original) A method of preserving data about a document that has been received in electronic form, the method comprising:

(a) encoding data about the document in a monochrome medium by:

(a1) converting the document to a rasterized image in which each pixel is assigned a raster value;

(a2) for each pixel:

(a2a) assigning a data word having a first bit depth, said data word comprising a first data field and a second data field;

(a2b) encoding a first component of said raster value into said first data field;

(a2c) encoding a second data value into said second data field;

(a2d) generating a grayscale data value comprising said first data field and said second data field; and,

(a2e) forming, onto the monochrome medium, a grayscale pixel conditioned by said grayscale data value;

(b) responding to a request for said first component of said raster value for each said grayscale pixel, by:

(b1) scanning said grayscale pixel to obtain a monochrome density value having a second bit depth;

(b2) decomposing said monochrome density value to obtain said first data field; and

(b3) decoding said first data field to obtain said first component of said raster value.

49.   (original) The method of claim 48 wherein said first bit depth is larger than said second bit depth.

50.   (original) A method of preserving data about a document that has been received in electronic form, the method comprising:

(a) encoding data about the document in a monochrome medium by:

(a1) converting the document to a rasterized image in which each pixel is assigned a raster value;

(a2) for each pixel:

(a2a) assigning a data word having a first bit depth, said data word comprising a first data field and a second data field;

(a2b) encoding a first component of said raster value into said first data field;

(a2c) encoding a second data value into said second data field;

(a2d) generating a grayscale data value comprising said first data field and said second data field; and,

(a2e) forming, onto the monochrome medium, a grayscale pixel conditioned by said grayscale data value;

(b) responding to a request for said second data value for each said grayscale pixel, by:

(b1) scanning said grayscale pixel to obtain a monochrome density value having a second bit depth;

(b2) decomposing said monochrome density value to obtain said second data field;

(b3) decoding said second data field to obtain said second data value.

51.   (original) The method of claim 50 wherein said first bit depth is larger than said second bit depth.

52.   (currently amended) An apparatus for decoding, from a rasterized image formed on a monochrome medium, a plurality of data values encoded within each pixel, the apparatus comprising:

(a) a scanner for scanning said each pixel in order to obtain a monochrome density value having a predetermined bit depth; ~~and~~

(b) a computer for obtaining said monochrome density value from said scanner, for decomposing said monochrome density value to

obtain a first data field and a second data field, for decoding said first data field in order to obtain a first data value and for decoding said second data field in order to obtain a second data value. ; and

(c) wherein said computer operational steps (b) are on a computer readable medium.

53.   (original) An apparatus for decoding a plurality of data values according to claim 52 wherein said predetermined bit depth is provided in a metadata section associated with said rasterized image.

54.   (original) An apparatus for decoding, from a rasterized image formed on a monochrome medium, a plurality of data values encoded within each pixel, the apparatus comprising:

(a) scanning means for obtaining, from said each pixel, a monochrome density value having a predetermined bit depth; and

(b) computing means for obtaining said monochrome density value from said scanning means, for decomposing said monochrome density value to obtain a first data field and a second data field, for decoding said first data field in order to obtain a first data value and for decoding said second data field in order to obtain a second data value.

55.   (original) An apparatus for decoding, from an image formed on a monochrome medium, a tristimulus color image value associated with each pixel, comprising a first data value, a second data value, and a third data value, the apparatus comprising:

(a) a scanner for scanning said each pixel in order to obtain a monochrome density value having a predetermined bit depth; and

(b) a computer for obtaining said monochrome density value from said scanner, for decomposing said monochrome density value to obtain a first data field, a second data field, and a third data field and for decoding said first data field in order to obtain said first data value, decoding said second data field in order to obtain said second data value, and decoding said third data field in order to obtain said third data value.

56.   (original) An apparatus for decoding, from an image formed on a monochrome medium, a tristimulus color image value associated with each pixel, comprising a first data value, a second data value, and a third data value, the apparatus comprising:

(a) scanning means for obtaining, from said each pixel, a monochrome density value having a predetermined bit depth; and

(b) computing means for obtaining said monochrome density value from said scanning means, for decomposing said monochrome density value to obtain a first data field, a second data field, and a third data field and for decoding said first data field in order to obtain said first data value, decoding said second data field in order to obtain said second data value, and decoding said third data field in order to obtain said third data value.